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EXAMINER

ABELSON, RONALD B

ART UNIT PAPER NUMBER

2666

DATE MAILED: 10/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/942,524

Applicant(s)

LEE ET AL.

Examiner

Ronald Abelson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 3/31/03, 7/5/02, and 8/29/01.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-157 is/are pending in the application.
- 4a) Of the above claim(s) 37-54, 92-100 and 138-155 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36, 55-91, 101-137, 156 and 157 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 July 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/31/03.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

**1. Election/Restriction**

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-36, 55-91, 101-137, and 156-157, drawn to the details of partitioning a stream into a plurality of substreams and reconstructing the plurality of substreams into a single stream, class 370 subclass 535-537.
- II. Claims 37 and 138, drawn to the details of encryption, class 380 subclass 201.
- III. Claims 38 and 139, drawn to the details of synchronization, class 370 subclass 509.
- IV. Claims 39-46, 51-54, 95-100, 140-145, and 152-155, drawn to the details of combined circuit and packet switching, class 370 subclass 352-354.
- V. Claims 47-50 and 146-151, drawn to the details data routing, class 709 subclass 238
- VI. Claims 92-94, drawn to the details of an alarm system, class 379 subclass 33.

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3. The inventions are distinct, each from the other because the search required for each group is independent of the other groups.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and the search required for Group I-VI are independent, restriction for examination purposes as indicated is proper.

6. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

7. During a telephone conversation with Mr. Arnold De Guzman on September 30, 2005, a provisional election was made without traverse to prosecute the invention of Group I, claims 1-36, 55-91, 101-137, and 156-157. Affirmation of this election must be

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made by applicant in replying to this Office action. Claims 37-54, 92-100, 138-155, and 152-155 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 2, 5, 6, 9, 15, 16, 18 22, 26, 30, 36, 101, 103, 104, 107, 108, 111, 117, 118, 120, 124, 128, 132, and 156

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rejected under 35 U.S.C. 102(b) as being anticipated by over Shimizu (US 5,293,378).

Regarding claim 1, 36, 101, and 156, Shimizu teaches partitioning a data stream into a plurality of sub-streams (fig. 1 box 11, col. 3 lines 31-35).

Shimizu teaches transmitting a sub-stream across an assigned circuit switching channel in one communication session (fig. 1 lines 5-8, telephone line, col. 1 lines 7-11, time division transmission lines, col. 3 lines 36-40).

Shimizu teaches reconstructing the plurality of streams into a single data stream (fig. 1 box 21, col. 3 lines 55-60).

Note, the applicant states, "A commonly known network with circuit switching channels is the telephone system" (pg. 1 line 26 - pg. 2 line 2). Shimizu teaches the transmission lines (fig. 1 lines 5-8) as being telephone lines (col. 1 lines 7-11). Therefore, Shimizu teaches transmitting a sub-stream across an assigned circuit switching channel.

Regarding claims 2 and 103, the sub-streams from the partitioning of the data stream are represented by a packetization format (fig. 2, col. 4 lines 17-18).

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Regarding claims 5 and 107, the communication session denotes any communication purpose served with a set of procedures in real-time or non-real time (packet transmission system, integrated video, voice, and data, col. 1 lines 18-25, packet transmission system, col. 1 lines 40-44). Note, the system of the reference is capable of transmitting packets containing integrated video, voice, and data, which are representative of real-time or non-real time data.

Regarding claims 6 and 108, one communication session denotes any combination purpose with various combinations of different types of procedures (packet transmission system, integrated video, voice, and data, col. 1 lines 18-25, packet transmission system, col. 1 lines 40-44). Note, the system of the reference is capable of transmitting packets containing integrated video, voice, and data.

Regarding claims 9 and 111, the circuit switching channels include wired links (fig. 1 line 5, time division transmission lines, col. 3 lines 36-40).

Regarding claims 15 and 117, the data stream includes multi-media content (packet transmission system, integrated

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video, voice, and data, col. 1 lines 18-25, packet transmission system, col. 1 lines 40-44).

Regarding claims 16 and 118, the multimedia content includes at least one of video and audio (packet transmission system, integrated video, voice, and data, col. 1 lines 18-25, packet transmission system, col. 1 lines 40-44).

Regarding claims 18 and 120, the multimedia content includes non-interactive characteristic (packet transmission system, integrated video, voice, and data, col. 1 lines 18-25, packet transmission system, col. 1 lines 40-44). Note, an interactive characteristic is not addressed in the reference.

Regarding claims 22 and 124, the reconstructing the plurality of sub-streams includes performing error compensation to minimize error effect in the reconstructed data stream (fig. 2, frame check sequence, col. 4 lines 9-11).

Regarding claims 26 and 128, the data stream includes video (packet transmission system, integrated video, voice, and data, col. 1 lines 18-25, packet transmission system, col. 1 lines 40-44).



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Regarding claims 30 and 132, the data stream includes audio / voice (packet transmission system, integrated video, voice, and data, col. 1 lines 18-25, packet transmission system, col. 1 lines 40-44).

Regarding claim 104, the data stream is transmitted as sub-streams in one communication session (fig. 2, col. 4 lines 17-18).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 3, 4, 17, 23, 24, 105, 106, 119, 125, and 126 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu as applied to claims 1, 1, 15, 1, 1, 104, 104, 117, 101,

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and 101 respectively, and further in view of Leonowich (US 5,734,675).

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Regarding claims 3 and 105, although Shimizu teaches video (integrated video, col. 1 lines 19-25), the reference is silent on wherein one communication session denotes a time-sensitive communication event.

Leonowich teaches one communication session denotes a time-sensitive communication event (demand priority protocol, interactive video, col. 3 lines 52-56).

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Regarding claims 4 and 106, Shimizu is silent on the communication session denotes an interactive communication event.

Leonowich teaches the communication session denotes an interactive communication event (demand priority protocol, interactive video, multi-media, col. 3 lines 52-56).

Regarding claims 17 and 119, Shimizu is silent on the multi-media content includes an interactive characteristic.

Leonowich teaches the multi-media content includes an interactive characteristic (demand priority protocol, interactive video, multi-media, col. 3 lines 52-56).

Regarding claims 23 and 125, Shimizu is silent on the data stream is related to time-sensitive video streaming.

Leonowich teaches the data stream is related to time-sensitive video streaming (demand priority protocol, interactive video, multi-media, col. 3 lines 52-56).

Regarding claims 24 and 126, although Shimizu teaches video (integrated video, col. 1 lines 19-25), the reference is silent on the time-sensitive video streaming includes an interactive characteristic.

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Leonowich teaches the time-sensitive video streaming includes an interactive characteristic (interactive video, col. 3 lines 52-56).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Shimizu by transmitting packets using the demand priority protocol (Leonowich: col. 3 lines 52-56). This modification would benefit the system by allowing for the transmission of multi-media applications including real-time video and interactive video (Leonowich: col. 3 lines 52-56).

14. Claims 7, 8, 21, 109, 110, and 123 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu as applied to claims 1, 1, 1, 101, 101, 101, above, and further in view of Horlin (US 6,212,162).

Regarding claims 7 and 109, Shimizu is silent on the partitioning the data based upon a characteristic of the data stream.

Horlin teaches partitioning the data based upon a characteristic of the data stream (fig. 2 box 3A, QoS, col. 7 lines 3-5).

Regarding claims 8 and 110, Shimizu is silent on the characteristic of the data stream is selected from at least one of priority / QoS, sources, defined objects, defined areas, rate of motion change, data stream importance, and security.

Horlin teaches the characteristic of the data stream is selected from at least one of priority / QoS, sources, defined objects, defined areas, rate of motion change, data stream importance, and security (fig. 2 box 3A, QoS, col. 7 lines 3-5). Note, the examiner corresponds the applicant's priority with the reference's QoS.

Regarding claims 21 and 123, Shimizu is silent on a channel is selected to transmit a particular sub-stream, based on the characteristic of the sub-stream.

Horlin teaches the circuit switching channel is selected to transmit a particular sub-stream, based on the characteristic of the sub-stream (fig. 2 box 3A, QoS, col. 7 lines 3-5).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Shimizu by replacing the Separating Circuit (fig. 1 box 11) with the Demultiplexer of Horlin (fig. 2 box 3A). This modification would benefit the

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system by allowing for the demultiplexing of data based upon QoS. This would enable data to be transmitted for source to destination based upon QoS priority.

15. Claims 10 and 112 rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu as applied to claims 1 and 101 above, and further in view of applicant's admitted prior art 'AAPA'.

Although Shimizu teaches circuit switching channels (fig. 1 lines 5-8, time division transmission lines, col. 3 lines 36-40) the reference is silent on the circuit switching channels include wireless links.

AAPA teaches the circuit switching channels include wireless links (3G mobile, pg. 2 lines 2-5).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Shimizu by augmenting the wireline transmission links (fig. 1 lines 5-8) with wireless links that adhere to 3G standards. This modification would benefit the system by allowing it to operate in a wireless environment.

16. Claims 11 and 113 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu as applied to claims 1 and 101 above, and further in view of Zirwas (US 20030147389).

Although Shimizu teaches the partitioned data stream is transmitted across circuit switching channels, the reference is silent on the channels are bundled.

Zirwas teaches transmitting across channels that are bundled (two channels bundled at 128 kbps, [0004]).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Shimizu by bundling two or more channels. This modification would benefit the system by allowing for higher rate transmission.

17. Claim 12, 34, 35, 102, 114, 136, 137, and 157 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu as applied to claims 1, 1, 1, 101, 101, 101, 101, and 156 above, and further in view of Berger (US 6,882,640).

Regarding claims 12 and 114, Shimizu is silent on transmitting a lower priority portion of the data stream across a packet switching channel.

Berger teaches transmitting a lower priority portion of the data stream across a packet switching channel (fig. 1,4,7, col. 5 lines 53-63, col. 6 line 55 - col. 7 line 6).

Regarding claims 34 and 136, Shimizu is silent on the lower

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priority portion of the data stream is transmitted as packets across a packet switching channel.

Berger teaches the lower priority portion of the data stream is transmitted as packets across a packet switching channel (fig. 1, data channel, packet switched data, col. 4 lines 7-9).

Regarding claims 35 and 137, Shimizu is silent on the packet is based on one of various protocols.

Berger teaches the packet is based on one of various protocols (voice over Internet protocol, col. 2 lines 15-16).

Regarding claims 102 and 157, although Shimizu teaches a plurality of channels communicatively coupled to the partitioning stage and capable to transmit a sub-stream from the data stream (fig. 1 lines 5-8) the reference is silent on a plurality of packet switching channels capable to transmit data having a lower priority characteristic.

Berger teaches a plurality of packet switching channels capable to transmit data having a lower priority characteristic (fig. 1,4,7, col. 5 lines 53-63, col. 6 line 55 - col. 7 line 6).



Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Shimizu by incorporating the hub of Berger (fig. 4) within the separating circuit of Shimizu (fig. 1 box 11) and augmenting the transmission lines (Smimizu: fig. 1 lines 5-8) with corresponding packet switching channels. Therefore, the lower priority data could be transmitted over the packet switching channels using voice over Internet protocol. The suggestion for the modification is higher priority traffic can be routed over the circuit switched channel and lower priority traffic can be routed over the packet switched channel (Berger: col. 5 lines 53-63).

18. Claims 13, 14, 115, and 116 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu as applied to claims 1, 1, 101, and 101 above, and further in view of Chan (US 6,766,140).

Regarding claims 13 and 115, Shimizu is silent on transmitting a non-interactive portion of the data stream across a broadcast channel.

Chan teaches transmitting a non-interactive / broadcast portion of the data stream across a broadcast channel /

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unidirectional channel (unidirectional channels used for broadcast because of low cost, col. 4 lines 36-38).

Regarding claims 14 and 116, Shimizu is silent on the broadcast channel being at least one of a broadcast television channel, broadcast radio channel, cable TV channel, pager channel, or another type of channel / unidirectional channel.

Chan teaches the broadcast channel being another type of channel (unidirectional channel, col. 4 lines 36-38).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Shimizu by augmenting the system to include unidirectional channels in addition to the transmission lines (fig. 1 lines 5-8). The unidirectional channels could be used for the transmission of broadcast information. The suggestion for the modification is unidirectional channels are used for broadcast because of low cost (Chan: col. 4 lines 36-38).

19. Claims 19, 20, 25, 27, 28, 31, 32, 121, 122, 127, 129, 130, 133, and 134, are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu as applied to claims 1, 1, 23, 26, 26,

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30, 30, 101, 101, 125, 128, 128, 132, and 132 respectively above, and further in view of Choi (US 6,707,851).

Regarding claims 19 and 121, Shimizu is silent on the data stream is based upon an object oriented multimedia standard.

Choi teaches an object oriented multimedia standard (fig. 1a, MPEG-4, col. 2 lines 34-46).

Regarding claims 20 and 122, the object oriented multimedia standard is based upon one of MPEG-4, MPEG-7, or MPEG-21.

Choi teaches the object oriented multimedia standard is based upon one of MPEG-4, MPEG-7, or MPEG-21 (fig. 1a, MPEG-4, col. 2 lines 34-46).

Regarding claims 25 and 127, Shimizu is silent on the time-sensitive video steaming has a bit rate below 1 Mbps.

Choi teaches the time-sensitive video steaming has a bit rate below 1 Mbps (fig. 1a, MPEG-4, col. 2 lines 34-46). Note, MPEG operates below 150 Kb (Newton: pg. 489).

Regarding claims 27 and 129, Shimizu is silent on performing compression on the video.

Choi teaches compression on the video (fig. 1a, MPEG-4,

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col. 2 lines 34-46). Note, MPEG is a compression scheme for full motion video (Newton: pg. 489).

Regarding claims 28 and 130, the compression is based upon MPEG-4.

Choi teaches the compression is based upon MPEG-4 (fig. 1a, MPEG-4, col. 2 lines 34-46).

Regarding claims 31 and 133, Shimizu is silent on performing compression on audio.

Choi teaches compression on the audio (fig. 1a, MPEG-4, col. 2 lines 34-46). Note, MPEG is a compression scheme for audio (Newton: CD quality sound, pg. 489).

Regarding claims 32 and 134, Shimizu is silent on the compression is based upon one of a speech compression technique or a stereo sound compression technique.

Choi teaches the compression is based upon one of a speech compression technique or a stereo sound compression technique (fig. 1a, MPEG-4, col. 2 lines 34-46). Note, MPEG employs a compression scheme for stereo/CD quality sound (Newton: pg. 489).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Shimizu by transmitting the data streams according to the MPEG-4 protocol. This would benefit the system since MPEG-4 is a popular standard for the integrated audio and video transmission.

20. Claims 29, 33, 131, and 135 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shimizu and Choi as applied to claims 27, 31, 128, and 132 respectively above, and further in view of Ketcham (US 6,704,357).

Regarding claims 29 and 131, although the combination of Shimizu and Choi teaches video using MPEG-4 (Choi: fig. 1a, MPEG-4, col. 2 lines 34-46), the combination is silent on the video being used for video conferencing.

Ketcham teaches video conferencing using MPEG-4 (fig. 1 box 106, col. 4 lines 13-17).

Regarding claims 33 and 135, although the combination of Shimizu and Choi teaches audio using MPEG-4 (Choi: fig. 1a, MPEG-4, col. 2 lines 34-46); the combination is silent on the audio being used for video conferencing.

Ketcham teaches audio for video conferencing using MPEG-4 (fig. 1 box 106, col. 4 lines 13-17).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of by using the audio/video codecs of Ketcham in the system of the combination. The suggestion for the modification is the codecs support video conferencing in a MPEG-4 environment (Ketcham: col. 4 lines 13-17).

21. Claims 55, 57-58, 61, 62, 65, 71, 72, 74, 78, 82, and 86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu in view of Graves (US 6,519,255).

Regarding claim 55, Shimizu teaches a channel de-bundler capable to partition a data stream into a plurality of sub-streams (fig. 1 box 11, col. 3 lines 31-35), the data stream transmitted from the source (fig. 1 box 1).

Shimizu teaches a channel bundler capable to reconstruct the substreams into a single data stream (fig. 1 box 21, col. 3 lines 55-60) for transmission to the destination (fig. 1 box 2).

Shimizu teaches a plurality of circuit switching channels communicatively coupled to the channel bundler and de-bundler and capable to transmit an assigned sub-stream (fig. 1 line 5-8,

telephone lines 7-11, time division transmission lines, col. 3 lines 36-40).

Shimizu is silent on an integrated channel bundler and de-bundler / 'bidirectional Mux/Demux'.

Graves teaches an integrated channel bundler and de-bundler 'bidirectional Mux/Demux' (fig. 1 box 15, 16, bidirectional mux/demux, col. 12 lines 48-50).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Shimizu by replacing the separating and restoring circuits with bidirectional Mux/Demuxs of Graves. This would benefit the system by enabling bidirectional transmission across the system.

Regarding claim 57, the sub-streams from the partitioning of the data stream are represented by a packetization format (Shimizu: fig. 2, col. 4 lines 17-18).

Regarding claim 58, the data stream is transmitted as sub-streams in one communication event (Shimizu: fig. 1 lines 5-8, telephone lines 7-11, time division transmission lines, col. 3 lines 36-40).

Regarding claim 61, the communication session denotes any communication purpose served with a set of procedures in real-time or non-real time (Shimizu: packet transmission system, integrated video, voice, and data, col. 1 lines 18-25, packet transmission system, col. 1 lines 40-44). Note, the system of the reference is capable of transmitting packets containing integrated video, voice, and data, which are representative of real-time or non-real time data.

Regarding claim 62, one communication session denotes any combination purpose with various combinations of different types of procedures (Shimizu: packet transmission system, integrated video, voice, and data, col. 1 lines 18-25, packet transmission system, col. 1 lines 40-44). Note, the system of the reference is capable of transmitting packets containing integrated video, voice, and data.

Regarding claim 65, the circuit switching channels include wired links (Shimizu: fig. 1 line 5, time division transmission lines, col. 3 lines 36-40).

Regarding claim 71, the data stream includes multi-media content (Shimizu: packet transmission system, integrated video,



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voice, and data, col. 1 lines 18-25, packet transmission system, col. 1 lines 40-44).

Regarding claim 72, the multimedia content includes at least one of video and audio (Shimizu: packet transmission system, integrated video, voice, and data, col. 1 lines 18-25, packet transmission system, col. 1 lines 40-44).

Regarding claim 74, the multimedia content includes non-interactive characteristic (Shimizu: packet transmission system, integrated video, voice, and data, col. 1 lines 18-25, packet transmission system, col. 1 lines 40-44). Note, an interactive characteristic is not addressed in the reference.

Regarding claim 78, the reconstructing the plurality of sub-streams includes performing error compensation to minimize error effect in the reconstructed data stream (Shimizu: fig. 2, frame check sequence, col. 4 lines 9-11).

Regarding claim 82, the data stream includes video (Shimizu: packet transmission system, integrated video, voice, and data, col. 1 lines 18-25, packet transmission system, col. 1 lines 40-44).

Regarding claim 86, the data stream includes audio / voice (Shimizu: packet transmission system, integrated video, voice, and data, col. 1 lines 18-25, packet transmission system, col. 1 lines 40-44).

22. Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shimizu and Graves as applied to claim 55 above, and further in view of Berger.

Although the combination a plurality of channels communicatively coupled to the channel bundler and de-bundler and capable to transmit a sub-stream from the data stream (Shimizu: fig. 1 lines 5-8), the reference is silent on a plurality of packet switching channels communicatively coupled to the channel bundler and de-bundler and capable to transmit a sub-stream from the data stream, the sub-stream having a lower priority characteristic.

Berger teaches transmitting a lower priority portion of the data stream across a packet switching channel (fig. 1,4,7, col. 5 lines 53-63, col. 6 line 55 - col. 7 line 6).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Shimizu by incorporating the hub of Berger (fig. 4) within the system of Shimizu and transmitting the lower priority data over packet switching channels. The suggestion for the modification is higher priority traffic can be routed over the circuit switched channel and lower priority traffic can be routed over the packet switched channel (Berger: col. 5 lines 53-63).

23. Claims 59, 60, 73, 79, and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shimizu and Graves as applied to claims 58, 58, 71, 55, and 55 respectively above, and further in view of Leonowich (US 5,734,675).

Regarding claim 59, although the combination teaches video (Shimizu: integrated video, col. 1 lines 19-25), the reference is silent on wherein one communication session denotes a time-sensitive communication event.

Leonowich teaches one communication session denotes a time-sensitive communication event (demand priority protocol, interactive video, col. 3 lines 52-56).

Regarding claim 60, the combination is silent on the communication session denotes an interactive communication event.

Leonowich teaches the communication session denotes an interactive communication event (demand priority protocol, interactive video, multi-media, col. 3 lines 52-56).

Regarding claim 73, the combination is silent on the multi-media content includes an interactive characteristic.

Leonowich teaches the multi-media content includes an interactive characteristic (demand priority protocol, interactive video, multi-media, col. 3 lines 52-56).

Regarding claim 79, although the combination teaches video (Shimizu: integrated video, col. 1 lines 19-25), the reference is silent on the data stream is related to time-sensitive video streaming.

Leonowich teaches the data stream is related to time-sensitive video streaming (demand priority protocol, interactive video, col. 3 lines 52-56).

Regarding claim 80, the combination is silent on the time sensitive video streaming includes an interactive

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characteristic.

Leonowich teaches time sensitive video streaming includes an interactive characteristic (demand priority protocol, interactive video, multi-media, col. 3 lines 52-56).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by transmitting packets using the demand priority protocol (Leonowich: col. 3 lines 52-56). This modification would benefit the system by allowing for the transmission of multi-media applications including real-time video and interactive video (Leonowich: col. 3 lines 52-56).

24. Claims 63, 64, and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shimizu and Graves as applied to claim 55 above, and further in view of Horlin (US 6,212,162).

Regarding claim 63, the combination is silent on the partitioning the data based upon a characteristic of the data stream.

Horlin teaches partitioning the data based upon a characteristic of the data stream (fig. 2 box 3A, QoS, col. 7 lines 3-5).

Regarding claim 64, the combination is silent on the characteristic of the data stream is selected from at least one of priority / QoS, sources, defined objects, defined areas, rate of motion change, data stream importance, and security.

Horlin teaches the characteristic of the data stream is selected from at least one of priority / QoS, sources, defined objects, defined areas, rate of motion change, data stream importance, and security (fig. 2 box 3A, QoS, col. 7 lines 3-5). Note, the examiner corresponds the applicant's priority with the reference's QoS.

Regarding claim 77, the combination is silent on the circuit switching channel is selected to transmit a particular sub-stream, based on the characteristic of the sub-stream.

Horlin teaches the circuit switching channel is selected to transmit a particular sub-stream, based on the characteristic of the sub-stream (fig. 2 box 3A, QoS, col. 7 lines 3-5).

Therefore it would have been obvious to one of ordinary

skill in the art, to modify the system of the combination of Shimizu and Graves by augmenting the Separating Circuit (Shimizu: fig. 1 box 11) with the Demultiplexer of Horlin (fig. 2 box 3A). This modification would benefit the system by allowing for the demultiplexing of data based upon QoS. This would enable data to be transmitted for source to destination based upon QoS priority.

25. Claim 66 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shimizu and Graves as applied to claim 55 above, and further in view of applicant's admitted prior art 'AAPA'.

Although the combination teaches circuit switching channels (Shimizu: fig. 1 lines 5-8, time division transmission lines, col. 3 lines 36-40) the reference is silent on the circuit switching channels include wireless links.

AAPA teaches the circuit switching channels include wireless links (3G mobile, pg. 2 lines 2-5).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Shimizu by augmenting the wireline transmission links (fig. 1 lines 5-8) with wireless links that adhere to 3G standards. This modification would benefit the system by allowing it to operate in a wireless

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environment.

26. Claim 67 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shimizu and Graves as applied to claim 55 above, and further in view of Zirwas (US 20030147389).

Although the combination teaches the partitioned data stream is transmitted across circuit switching channels, the reference is silent on the channels are bundled.

Zirwas teaches transmitting across channels that are bundled (two channels bundled at 128 kbps, [0004]).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of Shimizu and Graves by bundling two or more channels. This modification would benefit the system by allowing for higher rate transmission.

27. Claim 68, 90, and 91 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shimizu and Graves as applied to claim 55 above, and further in view of Berger (US 6,882,640).

Regarding claim 68, the combination is silent on



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transmitting a lower priority portion of the data stream across a packet switching channel.

Berger teaches transmitting a lower priority portion of the data stream across a packet switching channel (fig. 1,4,7, col. 5 lines 53-63, col. 6 line 55 - col. 7 line 6).

Regarding claim 90, the combination is silent on the lower priority portion of the data stream is transmitted as packets across a packet switching channel.

Berger teaches the lower priority portion of the data stream is transmitted as packets across a packet switching channel (fig. 1, packet switched data, col. 4 lines 7-9).

Regarding claim 91, Shimizu is silent on the packet is based on one of various protocols.

Berger teaches the packet is based on one of various protocols (voice over Internet protocol, col. 2 lines 15-16).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by incorporating the hub of Berger (fig. 4) within the system of the combination and transmitting the lower priority data over the packet switching network using voice over Internet protocol.

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The suggestion for the modification is higher priority traffic can be routed over the circuit switched channel and lower priority traffic can be routed over the packet switched channel (Berger: col. 5 lines 53-63).

28. Claims 69 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu as applied to claim 1 above, and further in view of Chan (US 6,766,140).

Regarding claim 69, Shimizu is silent on a broadcast channel communicatively coupled to the partitioning stage and capable to transmit a portion of the data.

Chan teaches transmitting a non-interactive / broadcast portion of the data stream across a broadcast channel / unidirectional channel (unidirectional channels used for broadcast because of low cost, col. 4 lines 36-38).

Regarding claim 70, Shimizu is silent on the broadcast channel being at least one of a broadcast television channel, broadcast radio channel, cable TV channel, pager channel, or another type of channel

Chan teaches the broadcast channel being another type of channel (unidirectional channel, col. 4 lines 36-38).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Shimizu by augmenting the system to include unidirectional channels in addition to the transmission lines (fig. 1 lines 5-8). The unidirectional channels could be used for the transmission of broadcast information. The suggestion for the modification is unidirectional channels are used for broadcast because of low cost (Chan: col. 4 lines 36-38).

29. Claims 75, 76, 81, 83, 84, 87, and 88 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shimizu and Graves as applied to claims 55, 55, 79, 82, 82, 86, 86 respectively above, and further in view of Choi (US 6,707,851).

Regarding claim 75, the combination is silent on the data stream is based upon an object oriented multimedia standard.

Choi teaches an object oriented multimedia standard (fig. 1a, MPEG-4, col. 2 lines 34-46).

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Regarding claim 76, the combination is silent on the object oriented multimedia standard is based upon one of MPEG-4, MPEG-7, or MPEG-21.

Choi teaches the object oriented multimedia standard is based upon one of MPEG-4, MPEG-7, or MPEG-21 (fig. 1a, MPEG-4, col. 2 lines 34-46).

Regarding claim 81, the combination is silent on the time-sensitive video steaming has a bit rate below 1 Mbps.

Choi teaches the time-sensitive video steaming has a bit rate below 1 Mbps (fig. 1a, MPEG-4, col. 2 lines 34-46). Note, MPEG operates below 150 Kb (Newton: pg. 489).

Regarding claim 83, the combination is silent on performing compression on the video.

Choi teaches compression on the video (fig. 1a, MPEG-4, col. 2 lines 34-46). Note, MPEG is a compression scheme for full motion video (Newton: pg. 489).

Regarding claim 84, the combination is silent on the compression is based upon MPEG-4.

Choi teaches the compression is based upon MPEG-4 (fig. 1a, MPEG-4, col. 2 lines 34-46).

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Regarding claim 87, the combination is silent on performing compression on audio.

Choi teaches compression on the audio (fig. 1a, MPEG-4, col. 2 lines 34-46). Note, MPEG is a compression scheme for audio (Newton: pg. 489).

Regarding claim 88, the combination is silent on the compression is based upon one of a speech compression technique or a stereo sound compression technique.

Choi teaches the compression is based upon one of a speech compression technique or a stereo sound compression technique (fig. 1a, MPEG-4, col. 2 lines 34-46). Note, MPEG employs a compression scheme for stereo/CD quality sound (Newton: pg. 489).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by transmitting the data streams according to the MPEG-4 protocol. This would benefit the system since MPEG-4 is a popular standard for the integrated audio and video transmission.

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30. Claims 85 and 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shimizu and Choi as applied to claims 27 and 31 above, and further in view of Ketcham (US 6,704,357).

Regarding claim 85, although the combination of Shimizu and Choi teaches video conferencing using MPEG-4 (Choi: fig. 1a, MPEG-4, col. 2 lines 34-46), the combination is silent on the video being used for video conferencing.

Ketcham teaches video using MPEG-4 (fig. 1 box 106, col. 4 lines 13-17).

Regarding claim 89, although the combination of Shimizu and Choi teaches audio using MPEG-4 (Choi: fig. 1a, MPEG-4, col. 2 lines 34-46), the combination is silent on the audio being used for video conferencing.

Ketcham teaches audio for video conferencing using MPEG-4 (fig. 1 box 106, col. 4 lines 13-17).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of by using the audio/video codecs of Ketcham in the system of the combination. The suggestion for the modification is the codecs support video

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conferencing in a MPEG-4 environment (Ketcham: col. 4 lines 13-17).

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (571) 272-3165. The examiner can normally be reached on M-F.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Ronald Abelson

Examiner

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